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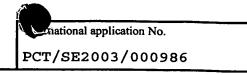
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

A 1:	T							
Applicant's or agent's file reference	FOR FURTHER ACTION See Form PCT/IPEA/416							
168-01								
International application No.	International filing date	(day/month/year)	Priority date (day/month/year)					
PCT/SE2003/000986	13.06.2003		03.07.2002					
International Patent Classification (IPC) o		nd IPC						
F04C 2/10, F16D 1/08, F16H 1/48								
Applicant								
SCANIA CV AB (publ) e	t al							
, p								
 This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 								
2. This REPORT consists of a total of	of 4 sheets	, including this cover	sheet.					
3. This report is also accompanied by	y ANNEXES, comprising	· · · · · · · · · · · · · · · · · · ·						
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(som to the applicant	and to the International E							
sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).								
• • •		ut which this Authori	ty considers contain an amendment that goes					
beyond the di	sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.							
	•	f (indicate type and n	umber of electronic carrier(s))					
, , , , , , , , , , , , , , , , , , , ,	and the second s		and/or tables related thereto, in computer					
readable form only, as Administrative Instruc	s indicated in the Supplem	ental Box Relating to	Sequence Listing (see Section 802 of the					
4. This report contains indications re	lating to the following iter	ns:						
l <u>——</u>	the report							
Box No. II Priority								
Box No. III Non-est	ablishment of opinion with	h regard to novelty, in	nventive step and industrial applicability					
Box No. IV Lack of	unity of invention		·					
Box No. V Reasone applicab	ed statement under Article pility; citations and explan	35(2) with regard to	novelty, inventive step or industrial					
	documents cited	11						
Box No. VII Certain	defects in the internationa	l application	•					
Box No. VIII Certain observations on the international application								
Date of submission of the demand Date of completion of this report								
a see or	• .	Date of completion (or uns report					
22.12.2003		30 00 2004						
Name and mailing address of the IPEA/SE	,	30.09.2004						
Patent- och registreringsverket	•	Authorized officer	·					
Box 5055								
Facsimile No. +46 8 667 72 88		Lena Nilsson / MRO Telephone No. +46 8 782 25 00						
Form PCT/IPEA/409 (cover sheet) (January 2004)								





Box	No. I	Ba	Basis of the report				
1.	With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item. This report is based on a translation from the original language into the following language						
		which	is the language of a translation furnished for the purposes of:	· · · · · · · · · · · · · · · · · · ·			
		Ц	international search (under Rules 12.3 and 23.1(b))				
			publication of the international application (under Rule 12.4)				
		Ш	international preliminary examination (under Rules 55.2 and/or 55.3)				
2.	furnisi	Vith regard to the elements of the international application, this report is based on (replacement sheets which have been arnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):					
		the int	ternational application as originally filed/furnished				
	\bowtie	the de	escription:				
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		pages* pages*					
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			* 9-10 received by this Authority on 14.06.20				
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		pages*	*	ally filed/furnished			
	-	pages*		***			
		a seque	uence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.				
3.		The an	mendments have resulted in the cancellation of:				
			the description, pages				
			the claims, Nos.				
			the drawings, sheets/figs				
			the sequence listing (specify):				
			any table(s) related to the sequence listing (specify):				
4.		This remade, 70.2(c)	report has been established as if (some of) the amendments annexed to this report and listed since they have been considered to go beyond the disclosure as filed, as indicated in the Super).	l below had not been oplemental Box (Rule			
			the description, pages				
			the claims, Nos.				
•			the drawings, sheets/figs				
			the sequence listing (specify):				
		Щ	any table(s) related to the sequence listing (specify):				
*	* If item 4 applies, some or all of those sheets may be marked "superseded."						

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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٠	national application No.
	PCT/SE2003/000986

Box No. V		Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement				
1.	Statement					
	Novel	ity (N)	Claims Claims	1-7	YES NO	
	Inven	tive step (IS)	Claims Claims	1-7	YES NO	
	Indust	trial applicability (IA)	Claims	1-7	VFS	

2. Citations and explanations (Rule 70.7)

Cited documents:

D1: US, A, 5439360

D2: PATENT ABSTRACTS OF JAPAN

vol. 1999, no. 04, 30 April 1999 (1999-04-30)

& JP 11013640 A (NISSAN MOTOR CO LTD),

Claims

19 January 1999 (1999-01-19) abstract

D3: PATENT ABSTRACTS OF JAPAN

vol. 2000, no. 19, 5 June 2001 (2001-06-05)

& JP 1050357 A (MITSUBISHI HEAVY IND LTD),

23 October 2001 (2001-10-23) abstract

D4: PATENT ABSTRACTS OF JAPAN

vol. 2000, no. 19, 5 June 2001 (2001-06-05)

& JP 1050358 A (MITSUBISHI HEAVY IND LTD),

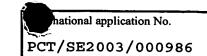
23 October 2001 (2001-10-23) abstract

None of the cited documents reveals a gear pump for a hydrodynamic brake comprising a rotatable shaft incorporating a portion which extends through a hole in the gearwheel, said portion of the shaft having a recess which incorporates a first surface and the gear wheel portion, which extends radially inwards in the gear wheel's hole and incorporates a second surface, which first surface and second surface are so shaped as to allow transfer of rotary motion from the shaft to the gear wheel. Therefore, the cited documents are considered to represent the general state of the art.

The invention defined in claims 1-7 is not disclosed by any of these documents.

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INTERNATIONAL PROMINARY REPORT ON PATENTABILITY



Supplemental Box

In case the space in any of the preceding boxes is not sufficient. Continuation of: $Box\ V$

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed gear pump for a hydrodynamic brake. Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-7 is novel and is considered to involve an inventive step. The invention is industrially applicable.

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DT12 Rec'd PCT/PTO 0 3 DEC 2004

Claims

- 1. A gear pump for a hydrodynamic brake which gear pump incorporates a ring gear (16) supported for rotation and having internal teeth (16a), a gearwheel (17) arranged excentrically within the ring gear (16) and incorporating external teeth (17') intended 5 to engage with the ring gear's internal teeth (16'), and a rotatable shaft (9) incorporating a portion which extends through a hole (18) in the gearwheel, while said portion of the shaft (9) has a recess (21) which incorporates a first surface (21') and the gearwheel a portion (22), which extends radially inwards in the gearwheel's hole (18) 10 and incorporates a second surface (22'), which first surface (21') and second surface (22') are so shaped as to allow transfer of rotary motion from the shaft (9) to the gearwheel (17), characterised in that said transfer between the first surface (21') and the second surface (22') takes place via a region of contact (a) which has axial extent equal to less than half of the gearwheel's axial extent (b) and which is divided by a radial plane (c) which extends centrally through the gearwheel (17). 15
 - 2. A gear pump according to claim 1, <u>characterised</u> in that said radial plane (c) divides the region of contact (a) into two substantially equal areas.
- 3. A gear pump according to any one of the foregoing claims, characterised in that said second surface (22') has a substantially planar extent in an axial direction and that said first surface (21') has a curved extent in an axial direction with a shape such that said region of contact (a) is constituted.
- 4. A gear pump according to claim 3, <u>characterised</u> in that that the first surface (21') has a curved extent beyond the region of contact (a) so that the distance between the first surface (21') and the second surface (22') increases in proportion to the distance from the region of contact (a).
- 5. A gear pump according to any one of the foregoing claims 1 to 3, <u>characterised</u> in that said first surface (21') has a planar extent in an axial direction and that said second

surface (22') has a curved extent in an axial direction with a shape such that said region of contact (a) is constituted.

6. A gear pump according to claim 5, <u>characterised</u> in that the second surface (22') has a curved extent beyond the region of contact so that the distance between the first surface (21') and the second surface (22') increases in proportion to the distance from the region of contact.

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7. A gear pump according to any one of the foregoing claims, <u>characterised</u> in that the hydrodynamic brake incorporates a structure with a multiplicity of recesses (14) for accommodating various components (15), each of which recesses (14) has an opening in a substantially common plane (A), and that the gear pump (15') is intended to be arranged in one of said recesses (14').